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NOTE ON THE SECONDARY ABDOMINAL LEGS IN THE MEGALOPYGIDÆ.

PLATE II, FIGS. 1–3.

By Harrison G. Dyar.

I have contended that the additional pairs of abdominal legs present in Megalopygidæ on abdominal segments 2 and 7 are secondary structures, leading up to the form shown in the Eucleidæ. Recently in watching the progression of a larva of *M. opercularis* on a smooth glass surface, I observed that the parts of the feet bearing crotchets were not used, but a small disk on the anterior side of each foot was applied to the glass in the same way as the membranous feet of segments 2 and 7. There is no disk on the last segment. Thus the Megalopygidæ have two distinct sets of abdominal feet, the normal ones, with crotchets, on segments 3 to 6 and 10 and the secondary membranous ones, functioning more as sucking disks, on segments 2 to 7. The larvæ are adapted to walk both on rough surfaces with their hooked feet, or on smooth ones with the membanous disks. The structures which I mention have been detected by Burmeister and accurately described. He says that segments 2 and 7 have "un coussin rond aplati, qui ressemble à la plante d'un pied;" on segments 3 to 6 "il y a un *second* coussin plus grand, qui ressemble, à une veritable patte membraneuse porvue d'une plante *sineuse* et d'une couronne de petits crochets cornés;" on segments 10 a normal foot "complètement conformée comme les quatres moyennes des six anneaux antérieurs mais *sans la petite plante accessoire* de celles-ci." I have italicized the important words. Fig. 1 shows the ventral aspect of the membranous foot of *M. opercularis* on abdominal segments 2 and 7; Fig. 2 the foot of segments 3 to 6 with the disk in front and the bent line of crotchets behind; Fig. 3 shows the normally formed foot of segment 10. I wish to emphasize this interpretation of these peculiar abdominal feet, as I believe that it shows very well the origin of the creeping disk of the Eucleidæ. *Me-*

galopyge differs from the Anthroceridæ and Pyromorphidæ only in the addition of the membranous pads to the ordinary feet. We have only to imagine the loss of the crochets and the extension of the pads till they touch each other, to give essentially the Eucleid structure.*

NOTE ON TWO HYDRŒCIA LARVÆ.

PLATE II, FIGS. 4–6.

By Harrison G. Dyar.

Mr. H. Bird has recently presented to the National Museum larvæ of *Hydrœcia nitela* and *H. purpurifascia*. A remarkable difference is seen between them in the position of one tubercle on the seventh abdominal segment. The general rule in the Noctuidæ is to have tubercle iv on the seventh segment low down near tubercle v, and this position is seen in *H. nitela* (Plate II, Fig. 5) In *H. purpurifascia*, however, this tubercle has been moved upward to the upper corner of the spiracle as on the other segments (Plate II, Fig. 4). The *Hydrœcia* larvæ are borers, and it is apparently requisite that such larvæ should protect the extremities and surround the spiracles by corneous shields. For this purpose all the tubercles are large and distinct, even the ordinarily obscure tubercle iiia is plainly seen before the spiracle (compare the otherwise generalized *Hypena humuli* (Plate II, Fig. 6), which does not show iiia). On most of the segments tubercle iv behind the spiracle, iii above it, iiia before and v below form sufficient protection; but on the seventh abdominal segment there is a lack of protection behind, apparently in a place where it is most needed. It would appear that the two *Hydrœcia* larvæ before me have independently attempted to correct this defect, and owing to some inherent difference of organization, have used different means to this end. *H. purpurifascia* has moved tubercle iv bodily upward into the place of greatest efficiency. *H. nitela*, on the other hand, has developed an additional small tubercle at the upper corner of the spiracle, which bears no seta. This little shield varies in size in different larvæ, its character being still not firmly fixed in the species. It would be interesting to examine the other species of *Hydrœcia* in this respect.

* It is to be noted that there are no feet on the anal segment in the Eucleidæ. The suckers are on the first eight abdominal segments, the first and last not so well developed as the others. These (*i. e.*, on abdominal segments 1 and 8) are in excess of those present in *Megalopyge*, but their less degree of development favors the view of their recent acquisition.